

# Work Order ID 66434

February 14, 2011 1:22:58 PM



Page 1

Item ID:	D4184-3	Accept		Setup	Start	
Revision ID:	PRELIM				Stop	
Item Name:	Main Case Cover					
Start Date:	2/14/11	Start Qty: 2.00		Cust Item ID:		
Required Date:	2/25/11	Req'd Qty: 2.00		Customer:		
Reference:						

Approvals:	Process Plan:	<u>CL</u>	Date:	<u>11/02/14</u>	Tooling:		Date:		Run	Start	
	QC:		Date:		SPC (Y/N):		Date:			Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr								
D4184	PAT <del>PA6</del>								

100		0.00							
HAAS 1									

HAAS CNC vertical machine #1	Memo	0.00							
	MILL AS PER DWG AND FOLIO FB035								
	FOLIO REV: <u>AA</u>								
	DWG REV: <u>PA6</u>								
	2-DEBURR								

110		0.00							
QC									

Quality Control	Memo	0.00							
	QC2- Inspect parts off machine FAI/FAIB								



MATERIAL CERTIFICATION  
REQ'D UPON DELIVERY

PRELIMINARY ISSUE

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 66434**

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Page 2

Item ID: D4184-3

Accept



Setup Start



Revision ID: PRELIM

Stop



Item Name: Main Case Cover

Start Date: 2/14/11 Start Qty: 2.00



Cust Item ID:

Required Date: 2/25/11 Req'd Qty: 2.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

*John 11.03.13*2 0 \_\_\_\_\_

Quality Control

150

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

2 9 11.03.14

Hand Finishing

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 66434**

February 14, 2011 1:22:58 PM

Page 3

Item ID: D4184-3

Accept

Revision ID: PRELIM

Item Name: Main Case Cover

Start Date: 2/14/11 Start Qty: 2.00

Required Date: 2/25/11 Req'd Qty: 2.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170 Packaging	Identify as per dwg & Stock Location: _____  Memo	0.00  0.00							
180 QC	QC21- Final Inspection - Work Order Release  Memo	0.00  0.00							
Packaging									
Quality Control									

POSITIVE RECALL

EFFECTIVE 2/22/11 AUTH         

RELEASED \_\_\_\_\_ DATE \_\_\_\_\_

*Pld 06-9  
E. Cade*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Page 1

February 14, 2011 1:22:57 PM

Work Order ID: 66434

Parent Item: D4184-3

Parent Item Name: Main Case Cover




Start Date: 2/14/11

Required Date: 2/25/11

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A NEW ISSUE 11-02-14 JLM VERIFIED BY :DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6102-003 		Manufactured	No				Each	4.0000		2			

Saddle Billet

Location

Loc Qty

Loc Code

MAT

4

65578

4

2 *amf 11/02/16*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Work Order ID 65578

January 20, 2011 9:14:34 AM



Page 1

Item ID: D6102-003

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle Billet

Start Date: 1/20/11 Start Qty: 4.00



Cust Item ID:

Required Date: 2/04/11 Req'd Qty: 4.00



Customer:

Reference:

Approvals:

Process Plan:

CL

Date: 1/10/20

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6102	Rev D								
100		0.00							
	PURCHASING								
Purchasing	Memo	0.00							
Purchasing	Issue P/O: 13331 □a)Description: Alluminum billet □b) 6.000" x 6.250" x 2.000" thick □c) Tolerance on all dimensions are +0.006"/-0.000" □d) Grain direction along 6.000" length □e) Material: 6061-T6/T651 (QQ-A-250/11) or (QQ-A-200/8) □Material certi								
110		0.00							
	Receive & Inspect for Damage & Mat'l Certs								
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								
120		0.00							
	QC6- Inspect dimensions to drawing								
QC	Memo	0.00							
Quality Control	Check certification to Dwg D6102 for compliance								

CL 1/10/20 (4)

CL 1/2/2 (4)

CL 1/2/08 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Work Order ID 65578

January 20, 2011 9:14:34 AM



Page 2

Item ID: D6102-003

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle Billet

Start Date: 1/20/11 Start Qty: 4.00



Cust Item ID:

Required Date: 2/04/11 Req'd Qty: 4.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130

Identify as per dwg & Stock Location: MAT.

0.00



Packaging

Memo

0.00

Packaging

MF 11-02-08

140

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/02/08 *[Signature]*

MF 11-02-08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

January 20, 2011 9:14:33 AM

Page 1

Work Order ID: 65578



Parent Item: D6102-003



Parent Item Name: Saddle Billet


Start Date: 1/20/11

Required Date: 2/04/11

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP A 01.05.04 New Issue EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6102-003P  6061-T6 6.25x6x2		Purchased	No			110	Each	0.0000	1	4		1/20/11	(4)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

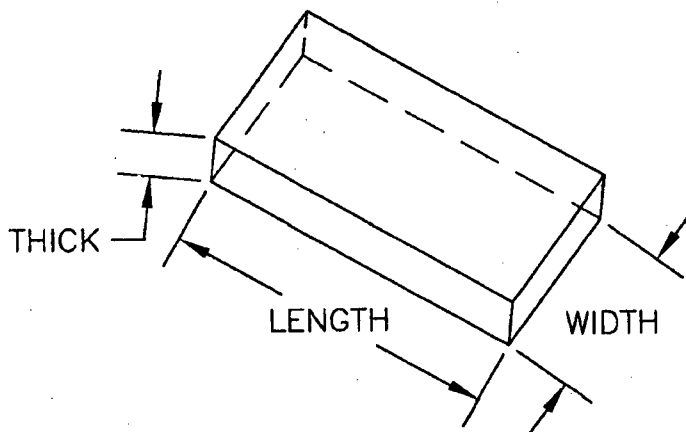
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**DART**

DESIGN	<i>PH</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>CP</i>	APPROVED	<i>PH</i>
DATE		DRAWING NO.	Rev. D
06.06.30		D6102	SHEET 1 OF 1
		TITLE	SCALE
		SADDLE BILLET, 6061	NTS
A	01.03.30	NEW ISSUE	
B	03.10.20	ADD D6102-005/-007/-009	
C	04.08.25	ADD D6102-010/-011	
D	06.06.30	ADD D6102-013	

## SPECIFICATION CONTROL DRAWING



SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 65578  
CD 11/01/20

RELEASED

06.08.15 *PH*

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.06/-0.00), AND GRAIN DIRECTION AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.06/-0.00.

ALL DIMENSIONS ARE IN INCHES.

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6102-001	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.880	6.250	2.000	Along 7.880 Length
D6102-003	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.000	6.250	2.000	Along 6.000 Length
D6102-005	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	47.85	15.250	1.000	Along 47.85 Length
D6102-007	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.500	7.000	2.500	Along 7.500 Length
D6102-009	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	11.000	6.000	5.000	Along 11.000 Length
D6102-010	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.950	8.250	2.500	Along 7.950 Length
D6102-011	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	8.250	2.500	Along 6.500 Length
D6102-013	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	7.000	2.000	Along 6.500 Length

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Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID PO13331

Purchase Order Date 1/20/11  
PO Print Date 1/20/11

Page Number 1 of 1

Order From :

VC-MET001

METAUX CASTLE  
A.M. CASTLE & CO. (CANADA) INC. - BOX B9204 PO BOX 9100  
TORONTO, ON M4Y 3A5  
CA

Contact Name		Buyer	Chantal Lavoie
Vendor Phone	514 694 9575	Requisition Nbr	
Vendor Fax	514 695 3281	Tax Resale Nbr	10127-2607
Vendor Account Nbr		Terms	Net 30
		Currency	CAD
		FOB	Destination-Collect

Ship To : DART AEROSPACE LTD 1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**FAXED**  
C21/01/11

e-mail trace,

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6102-003P	6061-T6 6.25x6x2	2/04/11 Yes	4.00 Each	Yours ppd	\$69.0000	\$276.00

Special Inst: AS PER DWG D6102 REV. D  
B65578  
MATERIAL: 6061-T6/T651 AS PER QQ-A-  
250/11 OR QQ-A-200/8  
SIZE: 6.000" X 6.250" X 2.000" THICK  
GRAIN DIRECTION ALONG 6.000"  
LENGTH  
TOLERANCE ON ALL DIMENSION ARE  
+0.006"/-0.000"

PO Total: \$276.00

MATERIAL CERTIFICATION  
REQ'D UPON DELIVERY

No substitution or deviation without  
consent.  
Certificate of Conformity or Material  
Certification required when applicable

Change Nbr: 1

Change Date: 1/20/11



**Castle Metals®**

A. M. Castle &amp; Co.

**PACKING SLIP**

Page 1 of 1

Shipment No:664141

<b>Ship From:</b> Castle Metals MONTREAL 825-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		<b>Ship To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		<b>Deliver To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
<b>Date Shipped</b> 01-FEB-11	<b>F.O.B.</b> ORIGIN	<b>Freight Terms</b> Prepaid		<b>Carrier</b> UPS		<b>BOL No</b> 664141-2	

<b>Shipment Details</b>	<b>Final Destination Branch - MON</b>
-------------------------	---------------------------------------

<b>Order No</b> 1233741	<b>Line No</b> 1	<b>Item No</b> 8641.MO	<b>Description</b> 2.0000.PL.6061.T651.ALUMINUM.48.5000.144.5000 CUT 2SIDED TO 6.25 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 6")) X 6 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 6")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/11				
<b>Purchase Order No</b> 13331		<b>Part Number</b> YOUR ITEM NUMBER: D6102-003		<b>Ordered Qty</b> 4 PCS		<b>Invoice Qty</b> 4 PCS	
<b>Details</b>							
<b>Delivery No.</b> 66599310	<b>Mill</b>	<b>Heat Number</b> 513882A1	<b>Mech Id</b>	<b>PCS</b> 4	<b>Width (IN)</b>	<b>Length (IN)</b>	<b>Shipped Qty (LBS)</b> 30.05

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

<b>Reviewed by Authorized Castle Metals Representative:</b>	<b>Date:</b>
---	--------------

ark  
11/02/08

## SHIP TO:

A M CASTLE & CO  
3400 NO. WOLF ROAD  
FRANKLIN PARK, IL 60131

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## SOLD TO:

AM CASTLE & CO- SOLD TO  
3400 NO. WOLF ROAD  
FRANKLIN PARK, IL 60131

## CERTIFIED TEST REPORT

Serial Number

4200629

CUSTOMER PO NUMBER: 61292		WORK PACKAGE:		CUSTOMER PART NUMBER: 8641 AMC A96061-161		SHIP RUN/LOAD: 101848/2		GOV'T CONTRACT NUMBER:		
KAISER ORDER NO: 1100864		LINE ITEM: 2	SHIP DATE: 28-JUL-2010		ALLOY: 6061	CLAD: BARE	TEMPER: T651	PRODUCT DESCRIPTION: KaiserSelect® Precision Plate		
WEIGHT SHIPPED: 11252 LB		QUANTITY: 8 PCS EST.		B/L NUMBER: 2028301		GAUGE: 2.0000 IN		DIAMETER/WIDTH: 48.500 IN		LENGTH: 144.500 IN

### Certified Specifications

AMS 4027/RevN  
CMMP 025/RevT

ASME SB 209/Rev2004

ASTM B 209/Rev07

Test Code: 1511

### Test Results

Lot: 512535A6 Cast 787 Drop 20 Ingot 3

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	48.9 : 49.6 (337 : 342)	43.6 : 44.9 (301 : 310)	15.0 : 15.1

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.68	0.5	0.35	0.08	1.0	0.20	0.11	0.02	0.01	0.00	TOT 0.06

Lot: 513882A1 / Cast 785 Drop 41 Ingot 5

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	49.4 : 49.7 (341 : 343)	43.9 : 44.0 (303 : 303)	14.9 : 15.3

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.71	0.6	0.29	0.08	1.0	0.19	0.16	0.02	0.01	0.00	TOT 0.05

*Handwritten signature*  
11/02/08

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4200629

Lot: 513967A0 Cast 785 Drop 25 Ingot 3

(ASTM E8/B557)  
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	49.4 : 49.7 (341 : 343)	44.1 : 44.8 (304 : 309)	14.6 : 15.0

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.68	0.6	0.28	0.09	1.0	0.18	0.18	0.02	0.01	0.00	TOT 0.05

### ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
6061 MIN	0.40	0.0	0.15	0.00	0.8	0.04	0.00	0.00	0.00	0.00	EACH	0.05
MAX	0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.05	0.05	TOT	0.15

Aluminum Remainder

### TEST NOTES

6061 sheet or plate certified to AMS 4025, AMS 4026, or AMS  
4027 also meets applicable requirements of AMS-QQ-A-250/11  
Rev.A.

Castle Metals Fp

HEAT NUMBER 513882A1  
MECHANICAL ID \_\_\_\_\_  
ITEM CODE 8641  
LOT NUMBER \_\_\_\_\_  
PO NUMBER 101292  
RECEIPT DATE 8-3-2010  
SUPPLIER KAISER  
SPECIFICATION \_\_\_\_\_  
LCS NU  
COMMENT \_\_\_\_\_  
APPROVED OK

### CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.226 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTIRE ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR

*Bill Poy*

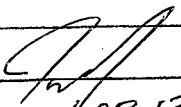
<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 66434
<b>Description:</b> MAIN CASE COVER	<b>Part Number:</b> D4184-3
<b>Inspection Dwg:</b> D4184 , Rev: PA7	<b>Page 1 of 3</b>

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☒ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.09	+/- .030	0.086	✓		Vern	GA-01
0.16	+/- .030	0.154	✓		"	"
0.33	+/- .030	0.325	✓		"	"
0.09	+/- .030	0.090	✓		"	"
0.06	+/- .030	0.061	✓		"	"
0.88	+/- .030	0.881	✓		D-6	GA-08
0.315	+/- .010	0.315	✓		"	"
φ 0.500	+0.006/-0.001	φ 0.500	✓		Vern	GA-01
φ 0.875	+0.000/-0.001	φ 0.8745	✓		Mic	GA-03
1.080	+/- .010	1.080	✓		Vern	GA-01
0.60	+/- .030	0.601	✓		"	"
R0.010	+/- .030	R0.010	✓		R-6	ref.
φ 0.750	+0.008/-0.001	φ 0.7515	✓		Mic	GA-03
φ 0.79	+0.010/-0.001	φ 0.789	✓		Vern	GA-01
φ 0.98	+0.010/-0.001	φ 0.980	✓		"	"
0.05	+/- .030	0.053	✓		Mic	GA-02
4.81	+/- .030	4.812	✓		Vern	GA-01
4.488	+/- .010	4.487	✓		"	"
5.22	+/- .030	5.216	✓		"	"
4.587	+/- .005	4.586	✓		"	"
2.976	+/- .005	2.975	✓		"	"
0.33	+/- .030	0.315	✓		"	"
0.33	+/- .030	0.315	✓		"	"

<b>Measured by:</b> H.A.
<b>Date:</b> 11/02/22

<b>Audited by:</b> 
<b>Date:</b> 11/03/23

<b>Prototype Approval:</b>
<b>Date:</b>

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	

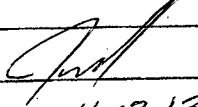
<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 66434
<b>Description:</b> MAIN CASE COVER	<b>Part Number:</b> D4184-3
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### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☒ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
2.06	+/- .030	2.055	✓		H-6	31006
0.80	+/- .030	0.800	✓		Vern	GA-01
R 0.13	+/- .030	R 0.125	✓		R-6	ref.
0.44	+/- .030	0.438	✓		Vern	GA-01
0.69	+/- .030	0.690	✓		"	"
0.38	+/- .030	0.375	✓		"	"
1.34	+/- .030	1.344	✓		H-6	31006
φ 0.173	+0.005/-0.001	φ 0.176	✓		Vern	GA-01
R 0.25	+/- .030	R 0.250	✓		R-6	ref.
R 0.17	+/- .030	R 0.170	✓		"	"
φ 0.312	+0.001/-0.000	φ 0.3125	✓		Mic	GA-03
φ 0.50	+/- .030	φ 0.499	✓		Vern	GA-01
0.55	+/- .030	0.552	✓		H-6	31006
45°	+/- 1/2 °	45°	✓		Angle Meter	CNC-03
3.801	+/- .010	3.801	✓		H-6	31006
0.741	+/- .030	0.740	✓		Vern	GA-01
0.01	+/- .030	0.009	✓		"	"
1.68	+/- .030	1.675	✓		H-6	31006
2.65	+/- .030	2.653	✓		"	"
0.08	+/- .030	0.075	✓		Vern	GA-01
1.56	+/- .030	1.563	✓		H-6	31006
0.75	+/- .030	0.752	✓		D-6	GA-08
0.41	+/- .030	0.410	✓		Vern	GA-01

<b>Measured by:</b> B.A
<b>Date:</b> 11/02/22

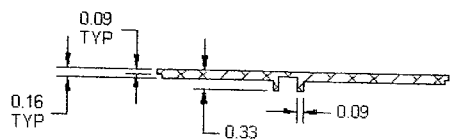
<b>Audited by:</b> 
<b>Date:</b> 11-03-13

<b>Prototype Approval:</b>
<b>Date:</b>

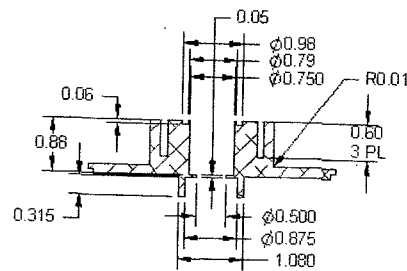
Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	



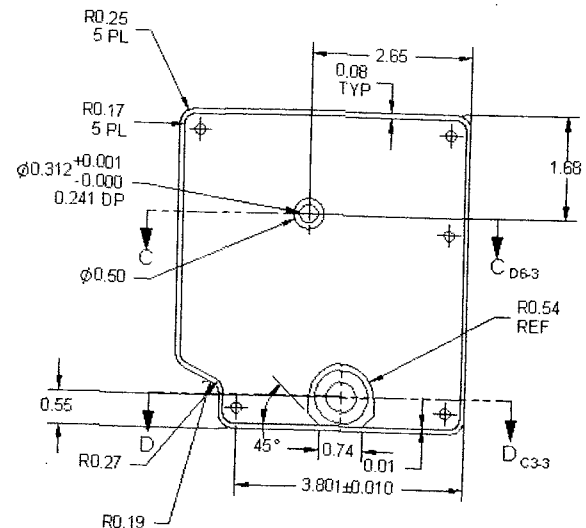
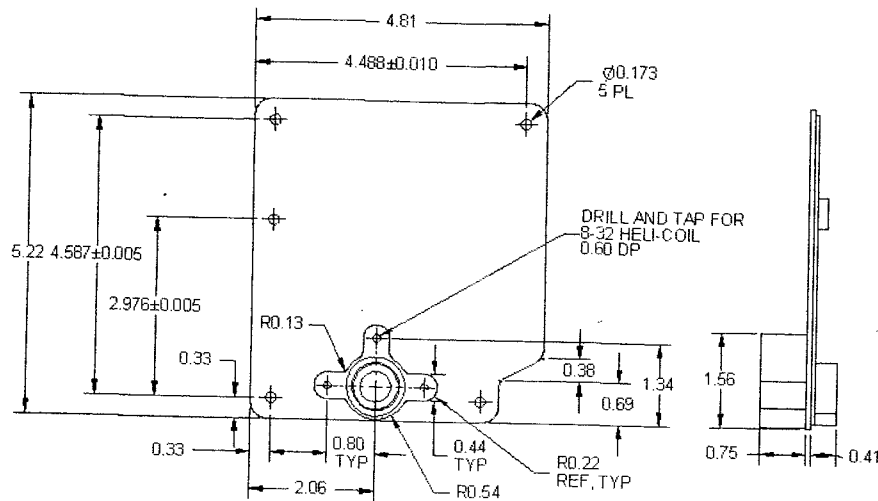
w/c 66434



SECTION C-C C1-3



SECTION D-D B1-3







D4184-3 MAIN CASE COVER

PRELIMINARY ISSUE

10.11.12

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR  
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221  
REF DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.44 lbs

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. PAZ
MFG. APPR.		D4184	SHEET 4 OF 7
APPROVED		TITLE	SCALE
DE APPR.		MAIN CASE	NTS
DATE	10.11.12	COPYRIGHT © 2010 BY DART AEROSPACE LTD	
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